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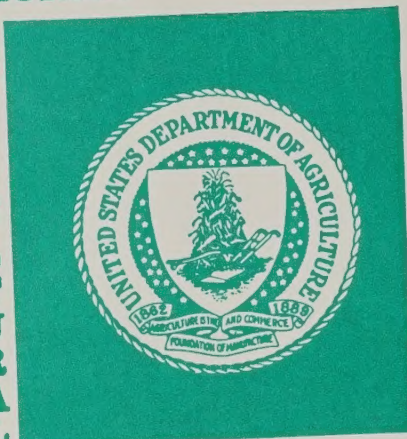
Government Intervention in the Mexican Crop Sector

Myles J. Mielke

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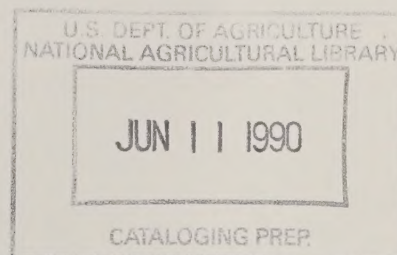
Abstract

Although Mexican agriculture is still regulated by nontariff barriers and domestic price controls, there has been some movement toward liberalization during the 1980's. There was less regulation of wheat and sesameseed in 1986 and 1987 than in previous years, for example. To simulate a gradual reduction in government intervention of the agricultural sector, a likely result of the current GATT negotiations, this report modeled a 50-percent reduction in Mexico's producer price subsidies over 5 years. Preliminary results indicate a substantial effect on the production and trade of corn and sorghum, but a relatively small effect on soybeans.

Keywords: Agricultural policies, Mexico, producer subsidies, PSE's, trade liberalization.

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Spanish Abbreviations

	<u>Spanish Name</u>	<u>English Name</u>
AZUCAR	Na	National Sugar Company
BANAMEX	Banco Nacional de Mexico	National Bank of Mexico
BANRURAL	Banco Nacional de Credito Rural	National Rural Credit Bank
CONASUPO	Compania Nacional de Subsistencias Populares S.A.	National Subsistence Popular Company
FERTIMEX	Fertilizantes Mexicanos S.A.	Mexican Fertilizer Company
FIRA	Fondos Instituidos en Relacion a la Agricultura	Funds Instituted for Agriculture (BANAMEX)
INMECAFE	Instituto Mexicano de Cafe	Mexican Coffee Institute
PRI	Partido Revolucionario Institucional	Institutional Revolutionary Party
SARH	Secretaria de Agricultura y Recursos Hidraulicos	Secretariat of Agriculture and Water Resources
SECOFI	Secretaria de Comercio y Fomento Industrial	Secretariat of Commerce and Industrial Development
TABAMEX	Tabacos Mexicanos	Mexican Tobacco Company

Government Intervention in the Mexican Crop Sector

Myles J. Mielke

Introduction

The Government of Mexico (GOM) provided considerable protection to its agricultural sector during the past decade. Mexico's high level of protection demonstrates the importance of agriculture to the overall economy and its social significance in terms of employment and political stability. Since 1982, Mexico has been opening its economy in response to internal and external economic pressures. This study provides some indication of the economic tradeoffs that are unavoidable as Mexico moves toward economic and trade liberalization.

Because of the decline in world petroleum prices and Mexico's severe financial crisis during the 1980's, Mexican authorities have been attempting to expand and diversify nonpetroleum exports in an effort to replace lost oil revenues. Mexico's agricultural sector has played a growing role in this regard by being one of the leading sectors to expand exports since the fall of oil prices. Agriculture's share of total exports increased from an average 7 percent during 1982-85 to over 12 percent in 1986-88. Agricultural exports averaged \$2.3 billion during 1986-88, up considerably from the average of \$1.6 billion for the previous 4 years.

In tandem with expanding exports, favorable domestic production in Mexico during most years of the 1980's has held import growth in check. Although agricultural imports declined in value after 1984 as both volume and prices decreased, its share of total imports has been maintained at 12-16 percent since 1985. Mexico remains a major agricultural importer, and one of the top four U.S. markets, averaging \$1.5 billion of U.S. agricultural imports annually during 1982-87. Weather-damaged crops and domestic price controls boosted agricultural imports to almost \$3 billion in 1988.

State Intervention in the Mexican Economy

Mexico has long protected its economy from foreign influences in order to develop its industrial base. Mexico, took the familiar "infant industry" position, which includes tariff and nontariff barriers, subsidized industrial production and wages through a cheap food policy, and the promotion of industrial exports, more recently focusing on petroleum exports.

During the past 7 years, there has been a gradual reversal of what were perceived as inward-oriented economic and trade policies. The Mexican Government undertook a number of policy changes in response to the debt crisis of 1982, the sharp drop in petroleum prices in 1986, and pressure from international lenders. Economic reforms included both fiscal and monetary changes. Government expenditures were reduced by lowering producer and consumer subsidies, by selling inefficient state enterprises (although this has proceeded much more slowly than other changes), and by forcing real official wages to decline. Because a large portion of Mexican employment is generated in the public sector, official minimum wage controls are an important fiscal policy tool.

Monetary reforms were conducted through interest rate and exchange rate adjustments. Real interest rates changed from negative to positive during the past 7 years. The Mexican peso was overvalued during 1973-81, but since then, it has been undervalued.¹ These policy reversals have also improved the prospects for Mexico's current account balance by attracting foreign capital (higher real interest rates) and by favoring exports over imports (undervalued peso).

The Mexican Government began to alter its import regime in 1983 by reducing tariff and nontariff barriers. The process was accelerated when Mexico joined the General Agreement on Tariffs and Trade (GATT) in August 1986. Import tariffs are being substituted for licensing, and the maximum tariff rate was reduced from 100 percent in 1986 to 20 percent in 1988. The GOM's "official pricing" policy, for purposes of increasing import prices above the invoice price to increase tariff revenues, was eliminated in 1987.

Intervention in Agriculture

Mexican agricultural programs were designed to protect low-income producers and to provide for food self-sufficiency. At the same time, national economic policies sought to protect urban wage earners by subsidizing food. The results were separate policy tracks that did not necessarily correspond with each other and, at times, were at odds with each other. The economic crises of the 1980's have tended to bring the policies closer together by reducing Government intervention in both areas.

Agricultural Sector Policies

The primary policies that influence agricultural production and trade are of two types: those that affect domestic prices (guaranteed minimum farm prices, trade volume controls, and exchange rate manipulation), and those that subsidize production

¹The undervaluation was determined by comparing the official exchange rate with an estimated "purchasing power parity" exchange rate.

(input subsidies, preferential interest rates on agricultural credit, subsidized crop insurance premiums, and irrigation subsidies). Low-income producers received additional production and marketing subsidies as part of the Government's commitment to economic equity.

Food, feed, and fiber consumption is influenced by price controls and subsidies on basic commodities. Agricultural markets are regulated by CONASUPO, the state agricultural marketing agency, which also owns food and feed processing plants and thousands of wholesale and retail outlets. CONASUPO also imports basic foods and feeds, and it purchases domestic production under the price support program. The GOM indirectly influences agriculture, as well as other economic sectors, through subsidies on energy products (such as diesel fuel and electricity) and transportation.

Agricultural trade is controlled by licensing requirements, import tariffs, and export duties. Agricultural imports are affected through the private sector and CONASUPO, which imports for its own account and for resale to the private sector. Primary agricultural exports are regulated by state-controlled marketing agencies such as INMECAFE (coffee), AZUCAR, S.A. (sugar), and TABAMEX (tobacco).

Agricultural Policy Reforms

Since the mid-1980's, internal and external economic pressures have forced the GOM to make significant subsidy reductions to producers and consumers. At the same time, the GOM has maintained and, in some cases, widened the gap between domestic and international crop prices, as indicated by the price support measures in this report.

Consumer food price controls were eased during the mid-1980's, but were reinstated in March 1988 as part of an ongoing program to control inflation. The GOM eliminated many of the food subsidies that existed before 1982, but subsidies continue for food staples (such as corn, milk, and wheat flour). Direct Government intervention in food marketing declined as CONASUPO purchased less of the domestic crops and shared more of the importation of agricultural commodities with the private sector. These changes helped to lower Government expenditures, as well as to liberalize agricultural markets.

Trade reforms are having a limited effect on agriculture, because 80 percent of Mexico's agricultural imports still require an import license (16).² Volume controls are still in effect for major imported grains, oilseeds, and dairy products. Agricultural trade controls are determined by a committee of public and private officials, but the final decision to issue an import license is made by the Secretariat of Commerce and

²Underscored numbers in parentheses cite sources listed in the References.

Industrial Development. There is no tariff paid on agricultural imports under quota. To prevent imports from displacing domestic production, import permits are not issued until the domestic crop is purchased. Agricultural exports continue to be regulated through export duties, export permits, and foreign exchange rate controls.

Estimation of Policy Intervention In Agriculture

Subsidies (taxes) affecting Mexican agricultural producers were estimated as part of the Economic Research Service (ERS) trade liberalization program to analyze and measure the degree of government intervention in U.S. and foreign agricultural sectors. This report presents the estimates of aggregate producer protection for seven Mexican crops in the form of producer subsidy equivalents (PSE's).

PSE's are usually defined as the amount required to compensate producers for the removal of government intervention. PSE's can be either positive (a subsidy) or negative (a tax), depending on government policy objectives. The PSE's measured in this report include policies that affect producer prices, production input subsidies, and exchange rate distortions. The individual commodity PSE's are usually expressed in local currency and as a percentage of the production value (see Appendix).

Commodity Coverage

The commodities covered in this report represent five imported items (wheat, corn, dry beans, sorghum, and soybeans) and two exported commodities (cotton and sesameseed). These seven crops are among the principal crops produced in Mexico, and four are major trade items. Together, they represent about 40 percent of Mexico's agricultural import value, but only about 3 percent of its agricultural exports. The seven commodities account for half the value of all crops, occupy about 60 percent of all cropland, and account for about two-thirds of all irrigated land. Of the seven commodities, two are traditional food staples in Mexico--corn (tortillas) and dry beans (frijoles). Wheat bread is a more recent food staple in the urban diet. Grain sorghum and soybeans are the primary feed inputs for the Mexican livestock sector. Cotton and sesameseed are major inputs to the Mexican food and fiber industry, as well as export commodities.

Imports of corn and sorghum each represent about 25 percent of total supply; wheat, 10-15 percent. Dry bean imports represented 5-10 percent of total supplies. Soybean imports accounted for about 60 percent of total supply during 1982-86. In some years, soybean imports are twice as large as domestic production. Sesameseed exports averaged 60 percent of total supply during 1982-86. Cotton exports ran as high as 45 percent of supply in 1983-84 but declined to around 30 percent in recent years. These percentages indicate a high dependence on trade for most of these commodities and, as such, trade liberalization should have a significant effect on them.

Policy Coverage

The PSE estimates for Mexico were based on the value of producer price subsidies, credit subsidies, and fertilizer price subsidies. Each was estimated separately and then combined to generate the total PSE. Other important policy interventions, principally irrigation subsidies, were not included because of insufficient data. The policies included in the analysis, however, provide a sufficient basis for an analysis of GOM intervention in agriculture. A separate PSE measure was calculated to account for the undervaluation of the Mexican peso during 1982-87 (see Appendix).

PSE Results by Commodity

The Mexican PSE's were generally positive, indicating a net subsidy transfer to Mexican producers (figs. 1 and 2 and table 1). This is particularly true for 1984-87 when most crops registered positive PSE's. The principal imported crops (excluding dry beans) were generally more protected than the exported crops (cotton and sesameseed). Except for beans, there was also a tendency for the PSE's to increase over time.

PSE's for 1982-87 fell into three categories; relatively high and positive, modest and positive, and mostly negative. PSE's for corn, sorghum, and soybeans were relatively high and positive since 1984. More modest, yet mostly positive, PSE's were registered for wheat, cotton, and sesameseed. The major exception was dry beans, which registered negative PSE's during most years, indicating producers were being taxed rather than subsidized.

The relatively high and positive PSE's for corn, sorghum, and soybeans can be partially explained by two factors. First, Mexico's agricultural policies have tended to favor low-income producers, which include most corn and sorghum producers. Second, the GOM has been concerned with reducing import costs following the debt crisis. Because these three crops are among the largest agricultural imports, the GOM attempted to stimulate production in order to limit imports. For these crops, the GOM has mostly employed price supports and import quotas to sustain producer prices.

The more modest support for wheat, cotton, and sesameseed is also consistent with recent GOM policy. Although producers of these three crops tend to be larger, more commercial producers, Mexican policies have sought to promote exports. The cotton PSE appears most consistent with this policy. Support for sesameseed was more modest and has declined since the mid-1980's.

The negative PSE's for dry beans were inconsistent with Government policy. Producers of dry beans generally have small farms, low incomes, and, in many cases, produce other traditional crops such as corn. Part of the problem with the dry bean PSE estimate may be with the choice of an international reference price used to estimate the producer price support (price wedge).

Figure 1 Mexican PSE's for imports

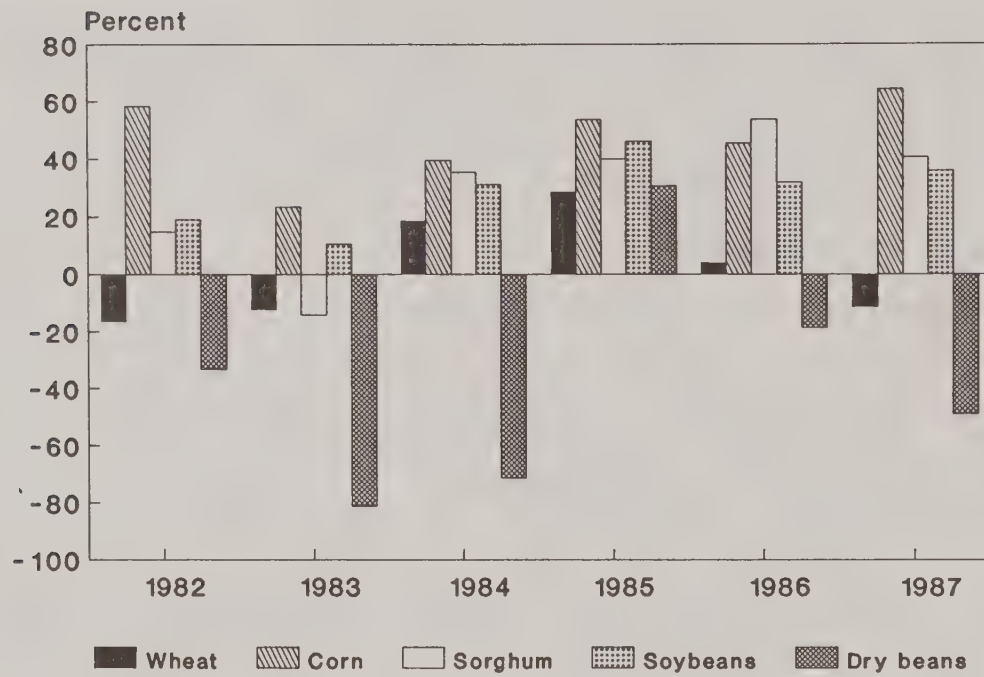


Figure 2 Mexican PSE's for exports

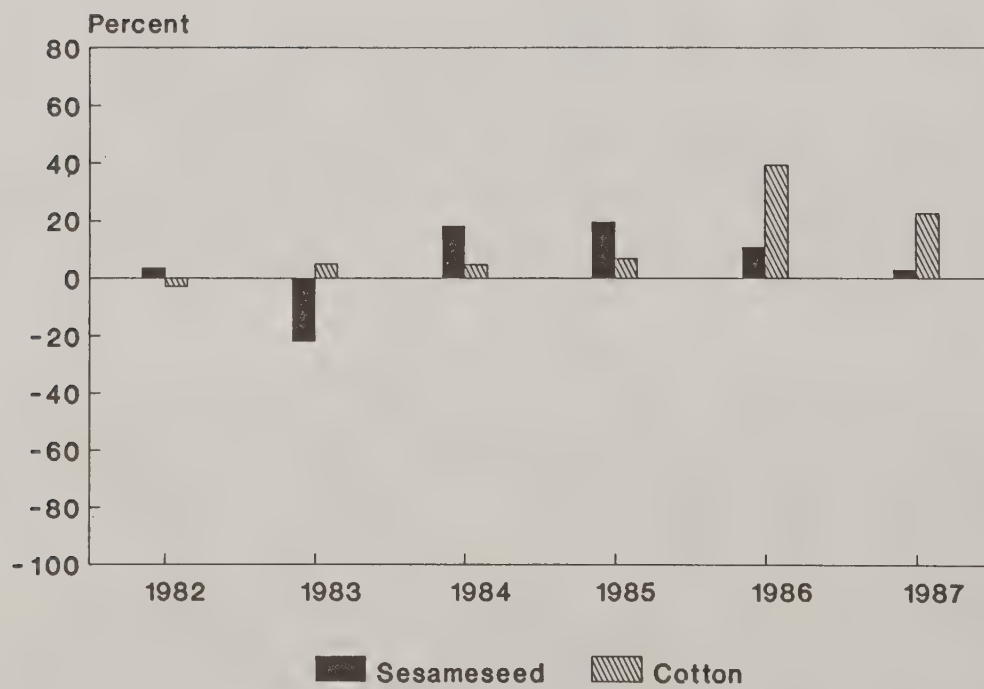


Table 1--Summary of Mexican producer subsidy equivalents

Item	1982	1983	1984	1985	1986	1987	1982-87
Percent							
Wheat:							
PSE 1	-16.54	-12.39	18.58	28.55	3.89	-11.27	1.41
PSE 2	9.66	17.16	23.79	34.04	34.24	20.38	25.87
Corn:							
PSE 1	58.30	23.33	39.51	53.82	45.51	64.26	54.95
PSE 2	71.35	41.33	42.92	57.08	61.65	75.24	65.64
Sorghum:							
PSE 1	14.76	-14.16	35.49	40.09	53.61	40.45	40.75
PSE 2	34.72	14.51	39.76	44.72	70.79	58.94	56.47
Soybeans:							
PSE 1	18.88	10.38	31.15	46.17	31.94	35.91	34.95
PSE 2	35.88	31.53	34.98	49.85	51.42	52.37	49.64
Dry beans:							
PSE 1	-33.24	-81.23	-71.22	30.74	-18.65	-48.88	-31.49
PSE 2	-2.65	-43.07	-62.91	35.03	10.24	-15.59	-4.43
Sesameseed:							
PSE 1	3.43	-21.91	17.97	19.30	10.77	2.64	6.51
PSE 2	25.66	6.76	22.78	24.79	36.77	27.10	27.10
Cotton:							
PSE 1	-2.84	4.92	4.68	6.71	39.38	22.50	20.24
PSE 2	26.92	38.24	12.35	14.42	70.47	60.26	51.50
Average:							
PSE 1	25.59	3.75	26.21	43.16	32.26	37.65	34.61
PSE 2	44.71	27.58	30.67	47.29	52.98	56.70	51.08

Note: PSE 1 was calculated using the official exchange rate.

PSE 2 calculations were adjusted for undervaluation of the official exchange rate.

There was not a reliable international reference price because dry beans were thinly traded in most years.

PSE Results by Policy

An analysis of PSE's by policy component indicates that producer price support policies were, on the average, the largest

component of the PSE measure (figs. 3 and 4 and table 2).³ Because producer price support was the major policy instrument, its PSE measure generally reflected the results discussed in the preceding section. The negative price supports for wheat and sesameseed were generally offset by input subsidies. The negative price support measure for dry beans was substantially larger than the input subsidies.

Subsidies to agricultural credit and fertilizer have been important components of Mexico's agricultural policy. Although not as important as price support policies, input price subsidies provide additional support to Mexican farmers, in particular, small, low-income producers. Input subsidies for many crops would have been much larger had irrigation subsidies been included. Because of difficulties in obtaining the necessary statistics, an irrigation PSE was not measured. It would likely have been the largest input PSE for the principal irrigated crops (wheat, soybeans, and cotton).

Finally, an alternative PSE estimate was calculated to account for the undervaluation of the Mexican peso during 1982-87. This was done because, in calculating the price support subsidy, international reference prices were converted from U.S. dollars to Mexican pesos at the official (undervalued) exchange rate. The undervaluation, which resulted in producers receiving higher prices in pesos, averaged 15 percent during the 6 years. The exchange rate adjustments significantly increased the value of the positive PSE's and reduced the value of the negative PSE's (table 1).

Changes over time in policy PSE's were less obvious, but there was a tendency for price support components to increase for corn, sorghum, and soybeans after 1984 (see table 2). The values of both input subsidy components declined for most commodities in 1986 and 1987. This is consistent with the GOM's policy of phasing out production input subsidies. The trend is more clearly reflected in the credit subsidy component.

Although there was protection of the crop sector, there were too many variations in the PSE results to establish a consistent pattern, except in a few cases. The PSE results tend to confirm a common problem in any analysis of Mexico's farm programs.

National economic policies may take priority and may obscure specific agricultural programs. For example, Government efforts to subsidize low-income producers, for purposes of equity, promote the production of all crops, whether desired or not.

³The "price support" is measured as the difference between producer and world prices, adjusted for marketing and transportation costs. It is also known as the "price wedge" and accounts for producer price policy and nontariff border measures that support producer prices.

Figure 3 PSE's by policy for imports
1982-87 average

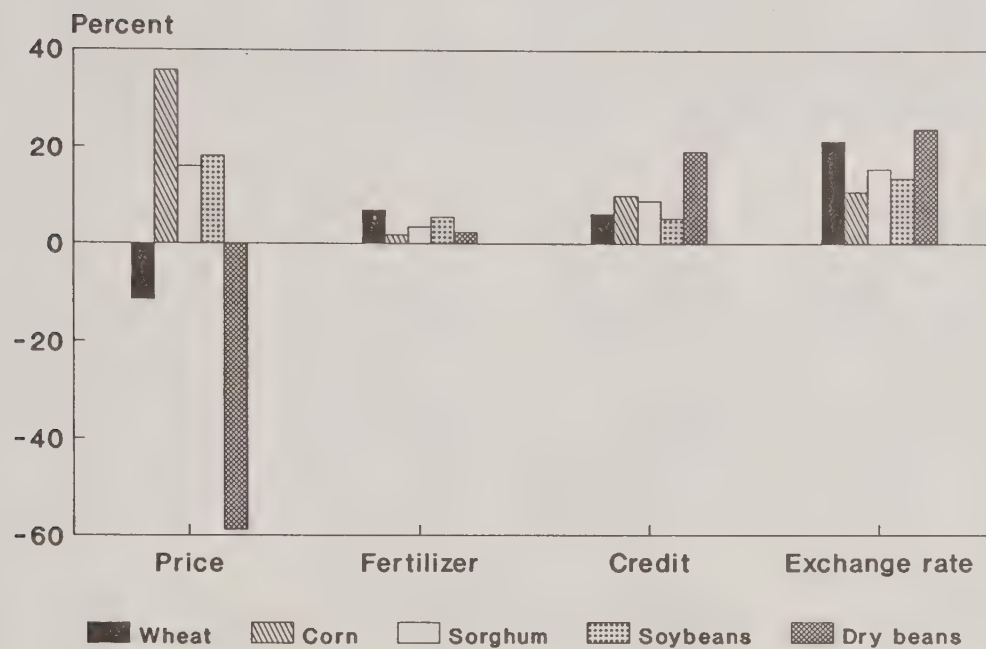


Figure 4 PSE's by policy for exports
1982-87 average

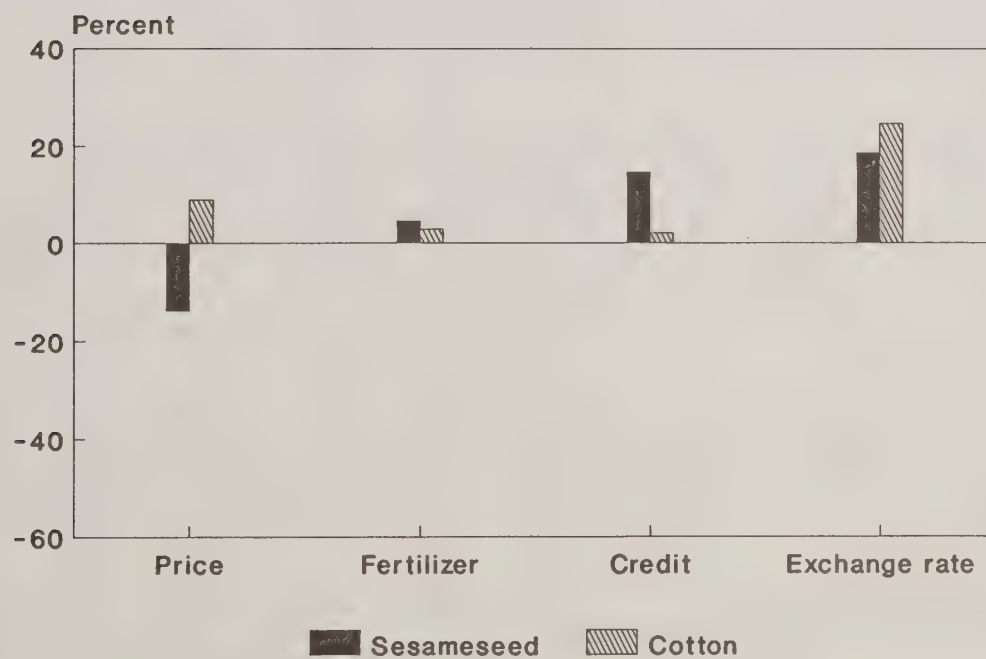


Table 2--Mexican PSE's by policy component

Item	1982	1983	1984	1985	1986	1987	1982-87
Percent							
Wheat:							
Price support 1/	-28.47	-31.03	7.56	16.57	-7.87	-25.47	-11.45
Fertilizer subsidy	5.98	8.43	4.91	5.00	7.81	10.07	7.03
Credit subsidy	5.95	10.21	6.12	6.98	3.95	4.13	6.22
Exchange rate adjust.	26.19	29.55	5.21	5.49	30.36	31.65	21.41
Corn:							
Price support 1/	31.77	11.72	31.08	44.29	37.85	57.58	35.71
Fertilizer subsidy	2.11	1.96	1.26	1.27	2.17	1.95	1.79
Credit subsidy	24.42	9.65	7.17	8.26	5.50	4.73	9.95
Exchange rate adjust.	13.05	18.00	3.41	3.27	16.14	10.98	10.61
Sorghum:							
Price support 1/	1.62	-34.61	23.26	28.04	45.44	32.19	15.99
Fertilizer subsidy	3.38	5.22	2.83	2.58	3.31	3.63	3.49
Credit subsidy	9.76	15.23	9.41	9.46	4.85	4.63	8.89
Exchange rate adjust.	19.96	28.67	4.26	4.63	17.18	18.48	15.53
Soybeans:							
Price support 1/	6.85	-6.25	20.76	35.43	22.07	30.34	18.20
Fertilizer subsidy	6.62	7.84	4.72	4.80	6.54	2.83	5.56
Credit subsidy	5.42	8.79	5.67	5.94	3.33	2.73	5.31
Exchange rate adjust.	16.99	21.16	3.83	3.68	19.48	16.46	13.60
Dry beans:							
Price support 1/	-83.08	-106.82	-92.23	17.79	-26.80	-60.75	-58.65
Fertilizer subsidy	3.51	3.03	2.05	0.91	1.63	2.95	2.35
Credit subsidy	46.32	22.56	18.96	12.04	6.52	8.92	19.22
Exchange rate adjust.	30.60	38.15	8.30	4.29	28.89	33.29	23.92
Sesameseed:							
Price support 1/	-21.48	-41.17	-1.65	-1.65	-6.37	-10.46	-13.80
Fertilizer subsidy	5.88	3.44	3.12	3.81	7.99	3.59	4.64
Credit subsidy	19.04	15.82	16.50	17.13	9.15	9.51	14.52
Exchange rate adjust.	22.23	28.66	4.82	5.49	26.00	24.46	18.61
Cotton:							
Price support 1/	-8.95	-1.26	-0.34	1.31	38.59	24.23	8.93
Fertilizer subsidy	3.92	3.53	2.39	2.47	3.31	1.90	2.92
Credit subsidy	2.19	2.65	2.62	2.92	1.41	0.84	2.10
Exchange rate adjust.	29.76	33.32	7.67	7.71	31.09	37.77	24.55
Average:							
Price support 1/	3.40	-10.58	16.32	32.64	23.87	29.95	15.93
Fertilizer subsidy	3.38	3.53	2.29	2.20	3.34	3.13	2.98
Credit subsidy	18.80	10.81	7.60	8.32	5.04	4.57	9.19
Exchange rate adjust.	19.12	23.83	4.46	4.12	20.73	19.05	15.22

1/ This estimate is similar to the the "nominal rate of protection" measurement, except that the denominator is the value of production such that the price support PSE = $(P_d - P_w) \cdot Q / P_d$, or $(P_d - P_w) / P_d$, where, P_d = domestic price; P_w = world price; Q = output.

Reducing Government Intervention

The U.S. position in the Uruguay Round of the GATT negotiations has called for an elimination of trade-distorting policies over a 10-year period. The implications of this position in terms of direct and indirect effects on economic resources and markets are of interest and importance to economic policymakers. To provide some indication of implications of trade liberalization for Mexico, a partial-equilibrium analysis was done to test the effect of a reduction in producer price subsidies on corn, sorghum, and soybeans.

Estimating the Effect of Subsidy Reductions

A reduction of producer subsidies was analyzed under the assumption that, even if the GATT talks do not achieve complete liberalization, there may be partial, unilateral reductions in Mexican subsidies. The reduction was assumed to be achieved by reducing the producer price subsidy, defined as the difference between the producer price and international reference price. The price subsidy was the largest single component of the positive PSE's and the most likely target for subsidy reduction if Mexico agrees to further liberalization. Subsidies on fertilizer and farm credit have been lowered to the extent that there is little room for making substantial reductions in these subsidies (table 2).

To measure the effect of a subsidy reduction, a projection model was used to forecast alternative production, consumption, and trade estimates. The model makes projections based on changes in an exogenous set of international reference prices.⁴ The baseline scenario assumed no changes in producer price subsidies. The trade liberalization scenario assumed a reduction in producer price subsidy of 50 percent over 5 years, using the same set of international reference prices.⁵

Production projections (via an area equation) were calculated using changes in international prices and producer subsidies. Mexican producer prices were estimated as the sum of international prices, adjusted for marketing and transportation costs, and the price subsidy.⁶ The same projections for consumption and yields were used in both scenarios.

⁴International price projections were based on future U.S. prices for wheat, sorghum, and soybeans. The price projections show a continuous decline in real prices over the next 5 years (12).

⁵This is not the same as reducing the total PSE by 50 percent because the PSE estimation also includes input subsidies, which were not accounted for in this exercise.

⁶There was no assumption about future exchange rates because the current Government policy is to move toward equilibrium in the exchange rate regime.

Consumption projections were calculated using the same price projectives, assuming that Mexican consumer prices would reflect changes in producer prices. Both the production and consumption calculations included own- and cross-price effects, and the consumption projections also included income and population growth effects.

Results and Implications of Subsidy Reductions

The results of projections over 5 years indicate significant differences in production growth between the alternative scenarios (figs. 5-10 and table 3). For corn and sorghum, growth in production would be positive under the baseline run and negative under the subsidy-reduction scenario. These differences resulted in a widening production gap between the two alternatives during the 5-year projection period (figs. 5 and 7). The production growth for soybeans was negative in both projection scenarios, with almost the same growth rate (fig. 9 and table 3).

The results for growth in imports of the three commodities are more dramatic. Because imports are a residual in the projection model, the slower (or negative) growth in production compared with consumption results in a substantial increase in imports for all three commodities (table 3).⁷ The widening import gap between the baseline and trade liberalization scenarios is particularly large for corn and sorghum (figs. 6 and 8). There was virtually no difference in the import projections for soybeans (fig. 10).

Because the projection model uses crop area as the deterministic production variable, the results imply a movement of resources out of agriculture or a shift to more profitable crops. In a partial equilibrium analysis such as this, however, it is not possible to specify alternative cropping patterns or other uses of farmland. If Mexican subsidy reductions were to occur in the context of a global liberalization that raised international prices for these crops, then the subsidy price reductions would be partially offset and the decline in area would also be lessened.

The projected decline in area may not necessarily lead to a decline in production if poor land moves out of production and yields rise. However, increases in yields high enough to offset area reductions are not probable. Marginal returns from advances in yield technology would be limited by lower input subsidies, reduced expenditures for research and extension, and limited water supplies in major irrigated areas. The cutback on Government expenditures for agriculture has been necessitated by austerity programs that are likely to remain in effect over the

⁷Consumption projections were the same for both scenarios and were based only on income and population growth projections.

Figure 5 Mexican corn production

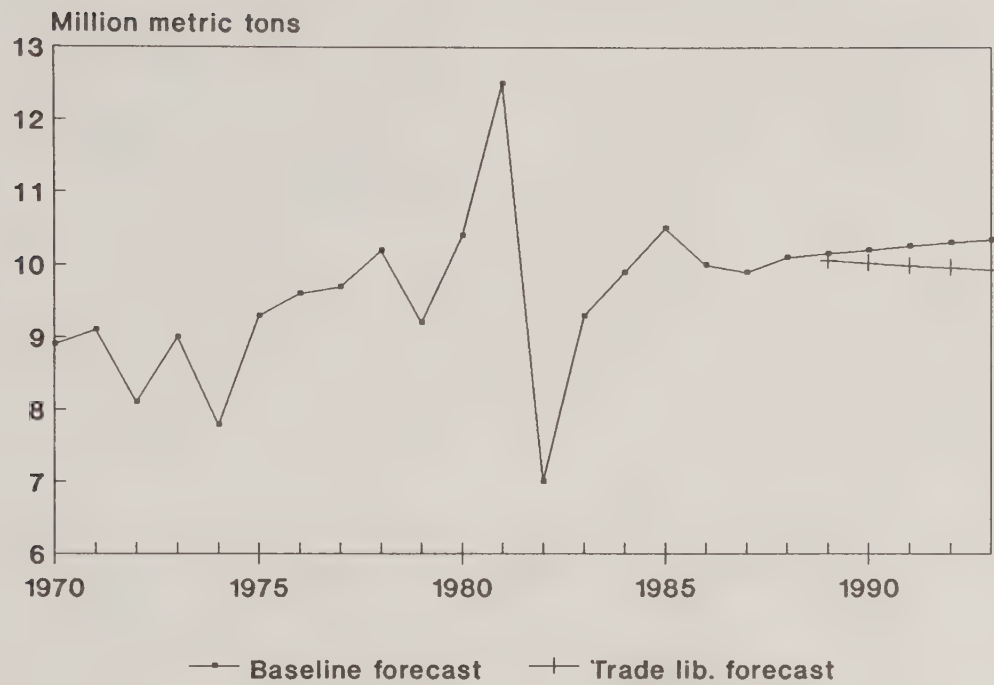


Figure 6 Mexican corn imports

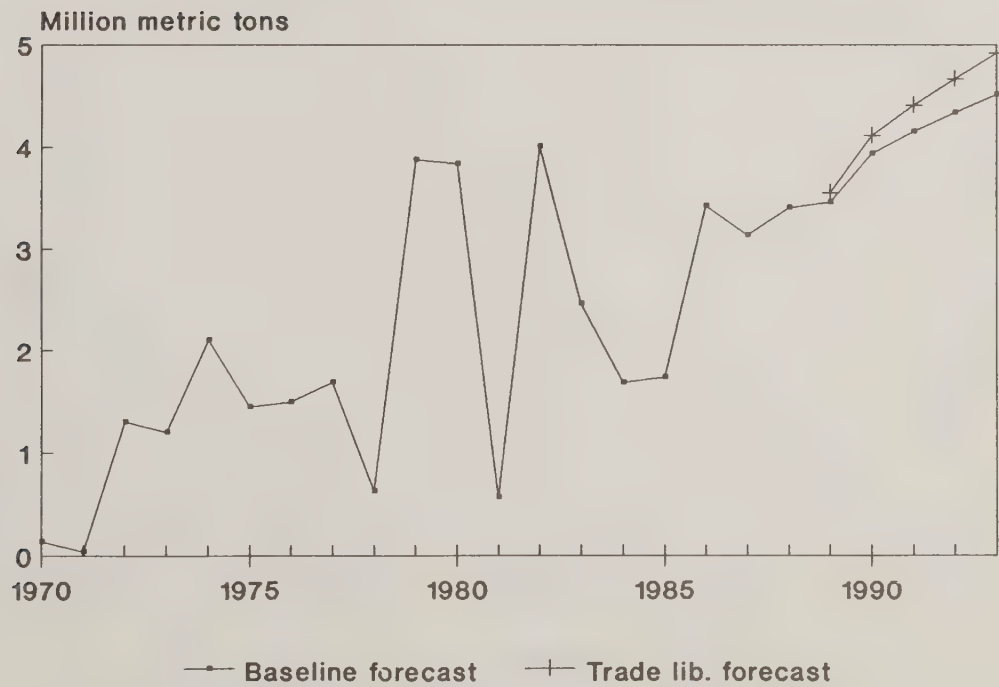


Figure 7 Mexican sorghum production

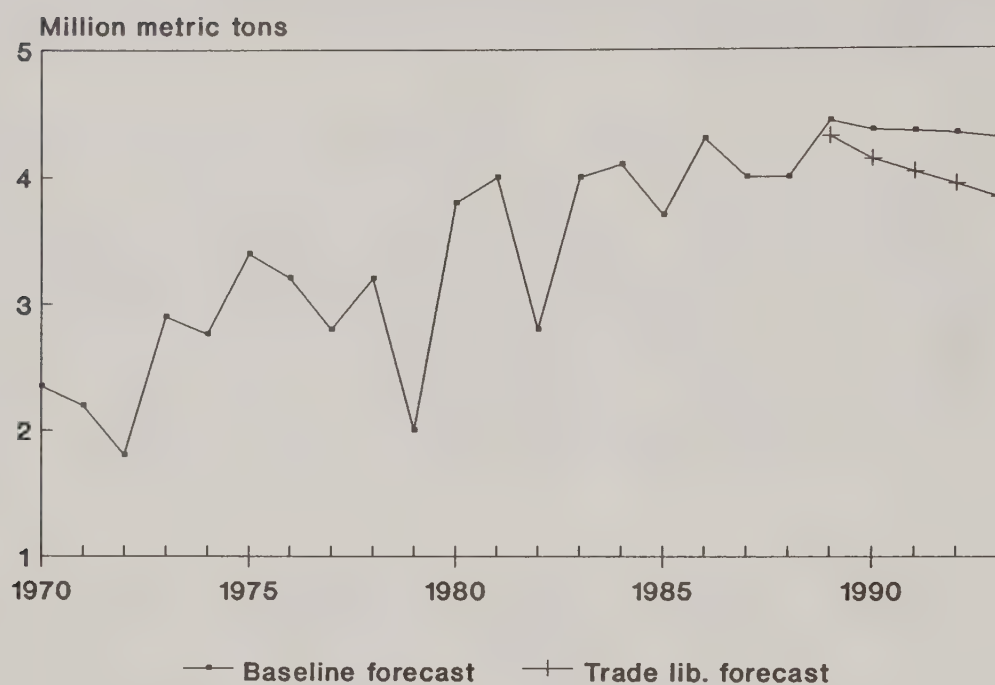


Figure 8 Mexican sorghum imports

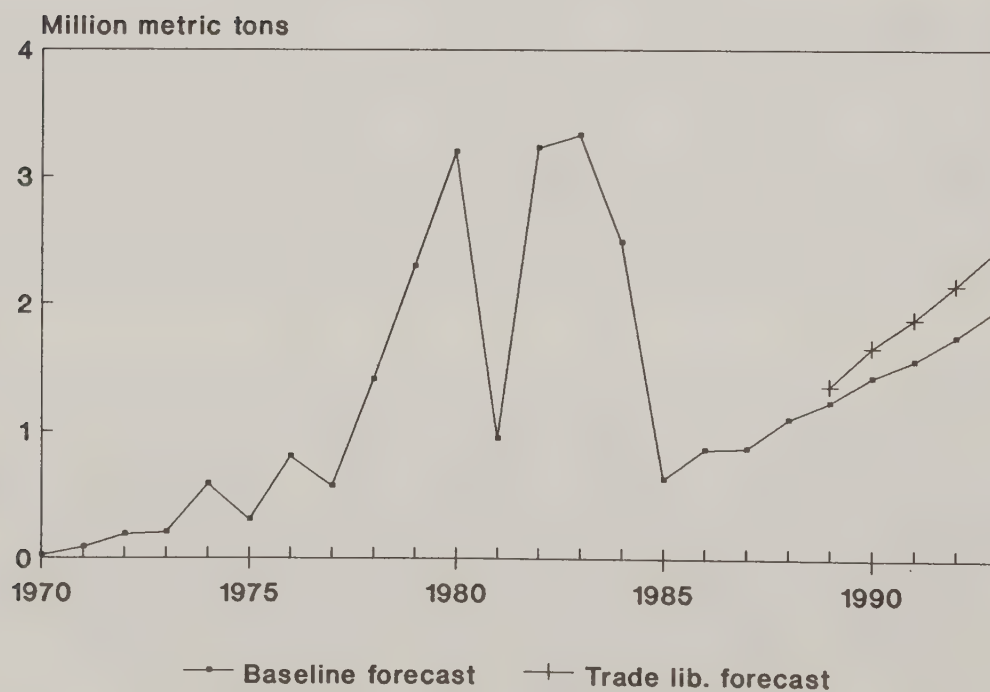


Figure 9 Mexican soybean production

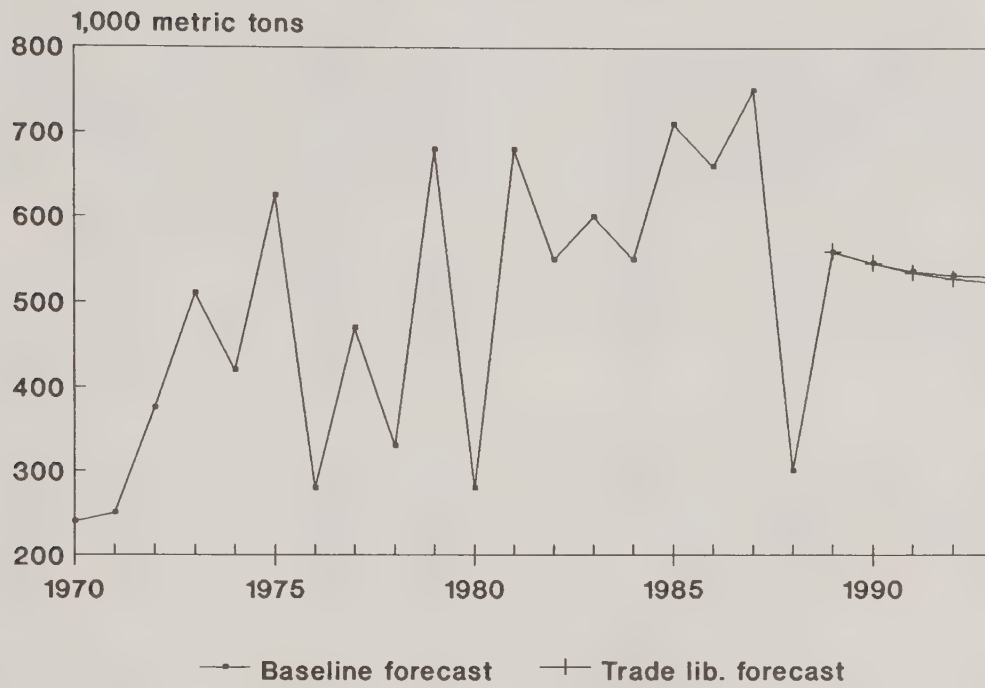


Figure 10 Mexican soybean imports

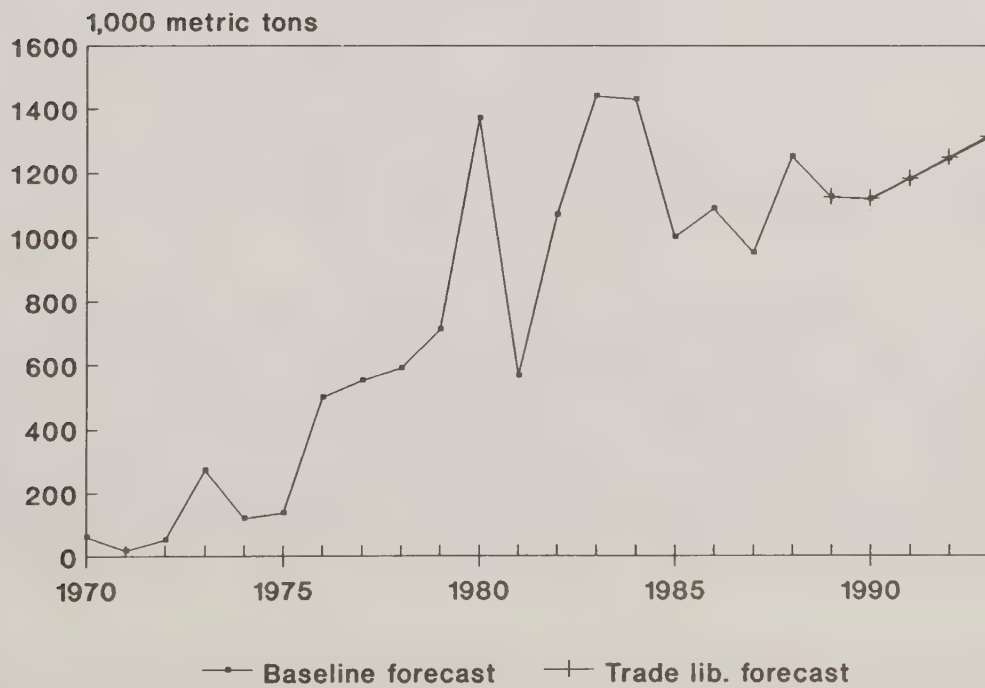


Table 3--Effects of reducing producer price subsidy

Item	Unit	Base period (1984-88)	Projection alternatives		Average growth rates	
			Baseline	Trade lib.	Baseline	Trade lib.

Percent						
Corn:						
Area	1,000 ha	6,120	6,090	5,954	-0.1	-0.6
Production	1,000 mt	10,080	10,344	9,939	2.6	-0.3
Consumption	1,000 mt	12,767	14,852	14,852	3.1	3.1
Imports	1,000 mt	2,674	4,517	4,922	11.1	13.0
Sorghum:						
Area	1,000 ha	1,340	1,378	1,266	0.6	-1.1
Production	1,000 mt	4,020	4,301	3,831	1.4	-1.0
Consumption	1,000 mt	5,424	6,636	6,636	4.1	4.1
Imports	1,000 mt	1,188	2,350	2,820	14.6	18.9
Soybeans:						
Area	1,000 ha	319	276	274	-2.9	-3.0
Production	1,000 mt	594	532	525	-2.2	-2.4
Consumption	1,000 mt	1,774	1,832	1,832	0.6	0.6
Imports	1,000 mt	1,144	1,308	1,314	2.7	2.8

next few years, or until Mexico works out of its budget deficits and foreign debt constraints.

Another result of trade liberalization would be the potential benefits to taxpayers and consumers. Lower producer prices could reduce consumer prices, as well as reduce Government expenditures on the producer price supports and consumer food subsidies. The actual implications for consumers, however, are less clear, given the current economic situation. Although the GOM removed subsidies on most basic food items during 1986-87 (corn tortillas and reconstituted milk were the main exceptions), consumer price controls were re-introduced in 1988. Thus, decisions to reduce producer price subsidies may not substantially affect demand until consumer price controls are removed.

The foreign exchange required to purchase the additional imports under the trade liberalization alternative has implications for debt and trade policy. Additional foreign exchange would have to be earned through expanding the Mexican trade surplus or attracting greater foreign investment, two areas already facing difficulties. If consumer price controls were removed at the same time, import demand may be lower than that indicated by the projection results, thus, reducing the demand for foreign exchange.

Conclusions

Mexican economic and trade policy has emphasized autonomy based on domestic political and economic priorities. This position

was reinforced by Mexico's foreign debt crisis which has influenced much of the recent economic policy changes. Mexico's current anti-inflation program has further complicated the trade liberalization issue because of the reimposition of economic controls in 1988.

Intervention in the domestic market is largely established through administered prices and direct Government marketing. Producer and consumer price controls will likely continue, although CONASUPO participation may decline as public sector spending is reduced. The effectiveness of domestic price subsidies largely depends on the availability of public financial support. The GOM has been moving in the direction of targeting price subsidies, partly to reduce expenditures. However, producer price supports and import volume controls tend to be lower cost (lower budget expenditure) options for administering domestic prices.

Notwithstanding Mexico's stated trade liberalization position, consumer price controls on basic foods and public services were reinstated in 1988 as part of the Government's austerity plan to combat inflation. There are also indications that CONASUPO is again subsidizing consumers by selling to food and feed processors at a loss (16). Delayed announcements in producer price guarantees and failure to adjust for inflation are also creating uncertainty in commodity markets.

It is not certain at this time what long-term effects this temporary reversal of trade liberalization will have on Mexico's trade and agricultural policies, but the GOM will likely continue to open its economy to help reduce public expenditures on state enterprises and subsidies. At the same time, the Mexican Government is acutely aware of the political consequences of trade liberalization, especially now that the ruling PRI party no longer commands overwhelming voter support.

If a reduction in Government support would result from the GATT negotiations, pressure from Mexico's principal suppliers would probably focus on the elimination of import quotas for basic agricultural products. Although trade liberalization has already eliminated many barriers, control of primary agricultural imports is one area where there has been little change and where resistance would likely be met. Food security and economic development priorities would likely be used as arguments for continuing import license requirements. However, it is not clear what the net benefits of this policy are for Mexican agriculture. This is evidenced by the high incidence of negative price wedges in the PSE calculations, implying that producers were being taxed in those years as a result of import controls, among other policies.

Trade liberalization in agriculture will likely be limited, until the GOM perceives that its agricultural sector is not at a disadvantage to more advanced farm sectors in developed economies, in terms of technology and economic protection. This implies that the GOM will continue to regulate agricultural trade

and will gradually phaseout producer and consumer subsidies as economic and political conditions permit. Reductions in producer and consumer subsidies are seen as consistent in meeting fiscal obligations as well as trade liberalization goals.

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Appendix--Methodology

The Mexican PSE analysis included: 1) the calculation of a price support to account for the effect of market and trade controls on the price of each commodity; 2) subsidized fertilizer prices; and 3) preferential interest rates for agricultural credit. Information is also being developed to estimate other production subsidies which may be significant for some commodities, such as irrigation for wheat and cotton.

Three different components of the PSE's were estimated for each of the Mexican commodities (table 2). The price support transfer was estimated by taking the difference between the producer price (5) and an international reference price and adjusted for transportation and marketing costs.⁸ The difference, measured in nominal pesos, was then multiplied by the volume of production to obtain the total value of producer transfers (subsidy or tax) attributable to policies which distorted producer prices. This was done for each of the commodities and for each year covered in the study.

The remaining PSE transfers in the Mexican case were input subsidies. The fertilizer subsidy was based on Government

⁸In most years, the reference price was based on the U.S. gulf port price plus freight and handling charges (11). Trade prices were converted from U.S. dollars to pesos at the official exchange rate (2).

transfers to FERTIMEX to pay for price subsidies (5). FERTIMEX is a state company that distributes fertilizers at discounted prices. The fertilizer subsidy was then allocated by crop, according to its share of total irrigated area.⁹ Agricultural credit subsidies were more difficult to calculate because of multiple lending institutions, the use of different interest rates for each producer income class, and the scarcity of information as to the allocation of credit by crop. The three primary lenders are: BANRURAL, the rural development bank; FIRA, the Bank of Mexico institution, which funnels international loans to the agricultural sector; and the commercial (nationalized) bank sector. Each of these lending sources had a specific amount of its agricultural loans allocated to a different producer income class.

Working capital (short-term) loans to low-income farmers accounted for about two-thirds of total crop loans, whereas the remainder of the loans were distributed evenly between middle- and upper-income producers (7, 19).¹⁰ The shares that each income/loan category contributed to total loans were then used to weight the different interest rates. This process resulted in a weighted-average interest rate for the Mexican farm sector. The difference between the estimated farm rate and the commercial rate was multiplied by the value of short-term loans to calculate the total credit subsidy for agricultural.¹¹ The agricultural credit subsidy was allocated by crop using BANRURAL's distribution of loans by crop area (5).

To calculate the distortion for undervaluation of the official exchange rate, a purchasing power parity exchange rate was estimated based on the difference between Mexican and U.S. wholesale price indices (WPI) (2, 10). The use of the WPI is justified on the grounds that the United States is Mexico's primary trading partner, accounting for two-thirds of Mexico's total trade and 75-85 percent of its agricultural trade. The value of the exchange rate adjustment for the price support calculation was estimated as the difference between the controlled and parity exchange rates (in pesos), multiplied by production.

⁹Information on fertilizer use by crop was not available, but this method of allocating the fertilizer subsidy was considered a close proxy under the assumption that little fertilizer was being applied to rainfed areas because of the higher risk of water shortages.

¹⁰Although capital development loans account for about 30 percent of all farm loans, they were excluded because most of these long-term loans were for livestock production.

¹¹The commercial rate was based on the "average cost of funds" which is a widely used indicator of Mexican commercial interest rates and is currently being used by the GOM to set agricultural interest rates (2).

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